REMARKS/ARGUMENTS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested.

Claims 1-13 and 34-47 and 49-60 are pending in the present application. Claims 1, 5-7, 34, 35, 38, 49-51, 54 and 58 are amended and claims 46, 61 and 62 are canceled by the present amendment.

In the Office Action mailed June 27, 2003, claims 1-13 and 34-62 were rejected under 35 U.S.C. § 112, first and second paragraphs; and claims 34-62 were rejected under 35 U.S.C. § 103(a) as unpatentable over Henry et al. in view of Tajima. In the Advisory Action mailed November 5, 2003, several of the previous rejections were maintained.

Applicants thank the Examiner for the courtesy of an interview extended to Applicants' representative on May 19, 2004. During the interview, the rejections noted in the outstanding Office Action were discussed. No agreement was reached pending the Examiner's further review when a response is filed. Comments presented during the interview are reiterated below.

Each of the specific rejections noted in the Office Action mailed June 27, 2003 will be listed below followed by remarks addressing the corresponding rejection.

At page 3, lines 4 and 5 with regard to claim 1, the Office Action states "[t]he specification does not adequately describe how the bearer service combination type is used to decide which bearer service profile type is to be used ..." In particular, the Office Action states "[n]amely, there is no adequate description in the specification as to the relationship between any

decided service type and any corresponding bearer service combination type.

Bearer service is a service which is provided by the layer 2 for transfer of user data between end to end points. See Introduction to 3G Mobile Communications, second edition, Juhua Korhohen, pgs 397-399 (hereinafter referred to as 3G MC) for a detailed description of bearer services. As discussed in the present specification, bearer services generally include combinations of speech, circuit data and packet data (see page 4, lines 16 and 17). These different combinations are referred to as bearer service combination types. For example, a bearer service combination type can be only speech, or speech and circuit data, or speech, circuit data and packet data, etc. (see page 5, lines 11-20).

A bearer service profile type is defined in the specification at page 5, lines 7 and 8 as including 1) the bearer service combination type noted above, 2) a bearer service class (discussed in detail at page 5, line 21 to page 7, line 13), and 3) environment items.

Thus, when one knows the bearer service combination type, it is possible to decide on a bearer service profile type. For example, if a bearer service combination type included a combination of speech and packet data, a bearer service profile type would include speech and packet data. The bearer service profile type also includes the bearer service class and environment item.

Continuing at page 3, the Office Action indicates that claim 1 also recites "... selecting a transport format within a transport format combination set according to the decided bearer service profile type ..." and "[t]he specification does not adequately describe how the bearer

service profile type is used to select any particular transport format that is within the transport format combination set ..."

As discussed above, the bearer service profile type can be selected based on the bearer service combination type (e.g., speech and circuit data, etc.). First, an explanation of TFS (Transport Formats), TFCs (Transport Format Combinations), TFIs (Transport Format Indicators) and TFCIs (Transport Format Combinations Indicator) will be given.

A transport channel is a concept applied to the interface between the Physical layer and the MAC layer (see the attached exhibit A from Figure 3.9 in 3G MC). The transport channels are used by the MAC layer to access the Physical layers. In addition, Physical layers use 10ms radio frames, for example, which are fixed in size and are filled with information from the MAC layer. The MAC layer generates a new transport block every 10ms, fills it with the necessary information and sends it to the Physical layer. Note that a set of simultaneously transport blocks is called a transport block set. Also, a transport block size indicates the size of the transport block in bits, and a transport block set size indicates the size of the transport block set. A Transmission Time Interval (TTI) indicates the inter-arrival time of transport block sets- i.e., how often the MAC layer sends data to the Physical layer (e.g., 10ms, 20ms, 40ms or 80ms). Exhibit B illustrates the concepts of TTI, transport blocks and transport block sets.

The "transport format" defines the format of the data in the transport block set and how the Physical layer should handle it. As described at page 93 of 3G MC, the transport format includes two parts: a semistatic part and a dynamic part. The semistatic part definitions are

common to all transport formats in a transport channel and define service attributes such as the quality and transfer delay for the data transfer. The semistatic part definitions include the TTI, type of error protection scheme, size of the CRC, and static rate matching parameter, for example. The dynamic part definitions can be different for every transport format and includes the transport block size and transport block set size.

An example of a transport format is:

Semistatic part: {10ms, turbo coding, static rate matching parameter =1}

Dynamic part: {320 bits, 640 bits}

Note the Dynamic part includes definitions for the transport block size and the transport block set size (i.e., 320 bits and 640 bits respectively). The semistatic part also includes the definitions noted above.

Now that the "transport format" is defined, this discussion will move to "transport format sets" and "transport format combination sets." All transport formats associated with a single transport channel form a transport format set. See Exhibit B. Further, several transport formats on different channels can exist simultaneously, each possibly having different transport characteristics. These different transport channels are multiplexed together into a Coded Composition Transport Channel (CCTrCH). The collection of transport formats used in the CCTrCH is called a transport format combination. A transport format combination set is defined as the set of all transport format combinations. The attached Exhibit B illustrates the concepts of the Transport Format (TF), Transport Format Set (TFS), Transport Format

Combination (TFC) and Transport Format Combination Set (TFCS). Note Exhibit B illustrates two transport channels (DCH1 and DCH2). Exhibit B shows one Transport Format Combination with a solid line surrounding the collection of transport formats on transport channels DCH1 and DCH2. Note, however, Exhibit B also shows two other transport format combinations, but these combinations are not outlined. The shown transport format combination set includes the three transport format combinations. A separate TFCI identifies each of the TFCS.

Note also that each TF within a transport format set is identified by a Transport Format Indicator (TFI), and the TFC is identified by a Transport Format Combination Indicator (TFCI). Exhibit C, which is Figure 3.23 from 3G MC, illustrates the concept of the TFI and TFCI (as well as transport block size and transport block set size). Note the TFI is used in the interlayer communication between the MAC layer and Physical layer to indicate the transport format.

Further, each of the UE and Node B includes a data table, for example, of the possible different combinations of TFCs. The possible number of combinations allowed is preset by the mobile communications company and thus can be stored in the UEs and node Bs. Thus, the Node B/UE need only transmit a TFCI, which is an index pointing to the proper TFC in the respective data table. Therefore, only the TFCI has to be transmitted verses transmitting all of the transport format information to define a TFC.

Thus, as noted above, a bearer service profile type has been decided. One novel feature of the present invention is that the transport format is selected within a TFCS assigned based on

the decided bearer service profile type, and the TFCI (which identifies the different transport formats) is transmitted to a dedicated physical control channel. The current 3G technical specifications do not includes such a feature. That is, the TFI/TFCI is associated with the service profile type.

Continuing at page 3 with regard to claims 6 and 11, the Office Action states "[t]he specification does not adequately describe how the periodic, on-demand, and threshold information is related to the different environmental models ..."

As shown in Figures 1A and 1B and as described at page 7, lines 14-20 of the specification, the RRC layer of the mobile station performs a measurement request/report procedure with the RRC layer of the base station. In response, the base station provides periodic, on demand and threshold information related to environmental measurements between the base station and mobile station the periodic information may be every hour, every 2 hours, etc. The on demand information may be an on demand request for the information at the current instance (e.g., send the environment information now). The threshold information relates to minimum/maximums thresholds required and may be determined by simulation, for example. Based on this information, the result may be placed into three environmental models:

1) an indoor environment (e.g., inside a house, office etc);
2) an outdoor to indoor environment and a pedestrian environment (e.g., going from inside to outside); and
3) Vehicular environmental model (e.g., driving in a car).

What environment the user is in may be determined by using a doppler effect. The environment may also be directly provided by the mobile terminal.

Thus, based on the provided periodic, on demand and threshold environmental measurement conditions, it is possible to select the type of radio environment information (e.g., that the mobile station is being used in a car.

Continuing at page 4 with regard to claims 7 and 10, the Office Action states "[t]he specification does not adequately describe how the transport format indicator is used to configure the dynamic part and the semi-static part ..." In particular, the Office Action indicates "there is not relationship drawn between any configured dynamic part and semi-static part and a corresponding transport format indicator or how any particular transport format indicator would be used to configure the dynamic and semi-static parts ..."

Claim 7 has been amended to recite that setting the transport format includes attributes of a dynamic part and semi-static part of transport formats indicated by the transport format indicator (TFI). As discussed above, the transport formats include dynamic and semi-static parts. Further, the TFI indicates the transport format. TFI's for different channels are multiplexed into a TFCI.

It is believed the above explanation also addresses the other 35 U.S.C. § 112, first paragraph rejections noted in the Office Action.

Turning now the rejections of the claims 1-13 and 34-62 under 35 U.S.C 112, second paragraph.

The above discussion address the 35 U.S.C. 112, second paragraph rejections as well, with the exception of the rejection regarding Claims 9 and 13 (see page 7 of the Office Action). Regarding this rejection, the Office Action indicates it is unclear what is meant by outer interleaving, outer coding, inner coding and inner interleaving." Inner coding and inner interleaving correspond to the data being coded and interleaved before the transport channels are multiplexed (meaning each transport channel can be coded with different coding schemes). Further, outer coding and outer interleaving correspond to coding and interleaving after the transport channels have been multiplexed. The attached Exhibit D illustrates an example of inner coding and inner interleaving being performed before the transport channels are multiplexed.

Accordingly, it is respectfully requested this rejection also be withdrawn.

Claims 34-62 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Henry et al. in view of Tajima. This rejection is respectfully traversed.

As discussed above, according to the present invention the transport format is selected based on the bearer service profile type (which includes the bearer service combination type, bearer service class, and/or the environment items). Thus, the transport format to be selected (and the TFIs/TFCIs associated therewith) will be different depending on what the bearer service profile type is. The bearer service profile type is received from an upper layer. Currently, in the 3G communications standards, the TF (or TFI/TFCI) are not selected based on the profile type, which includes the environment measurement.

Further, Henry et al. relates to operating mobile stations of wireless communication systems in multiple modes by external control. However, Henry et al. does not disclose determining a transport format combination set (e.g., the different transport formats) based on the service profile types (which includes the combination type, class and/or environment measurement). Tajima also does not teach or suggest these features.

That is, Henry et al. and Tajima do not teach associating a TF or TFCS (and the corresponding TFI/TFCI) with the service profile type. Accordingly, it is respectfully requested this rejection also be withdrawn.

Further, the title has been amended and it is believed no new matter has been added.

CONCLUSION

In view of the foregoing amendments and remarks, it is respectfully submitted that the application is in condition for allowance. Favorable consideration and prompt allowance are earnestly solicited. If the Examiner believes that any additional changes would place the application in better condition for allowance, the Examiner is invited to contact the undersigned attorney, **David A. Bilodeau**, at the telephone number listed below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this, concurrent and future replies, including extension of time fees, to Deposit Account 16-0607 and please credit any excess fees to such deposit account.

Respectfully submitted,
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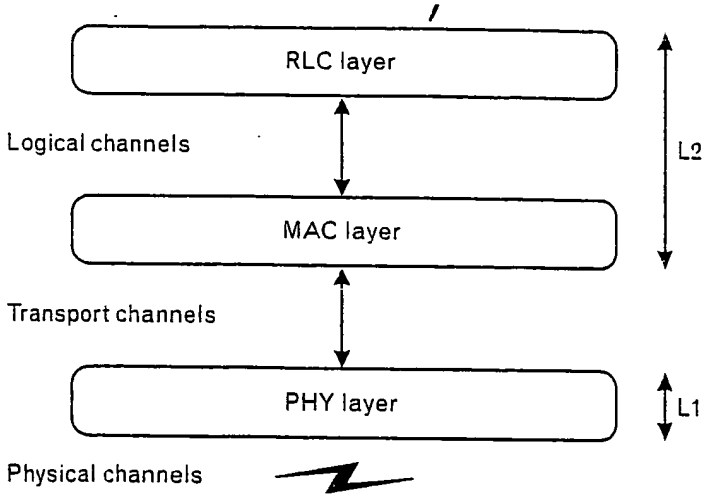

Exhibit A

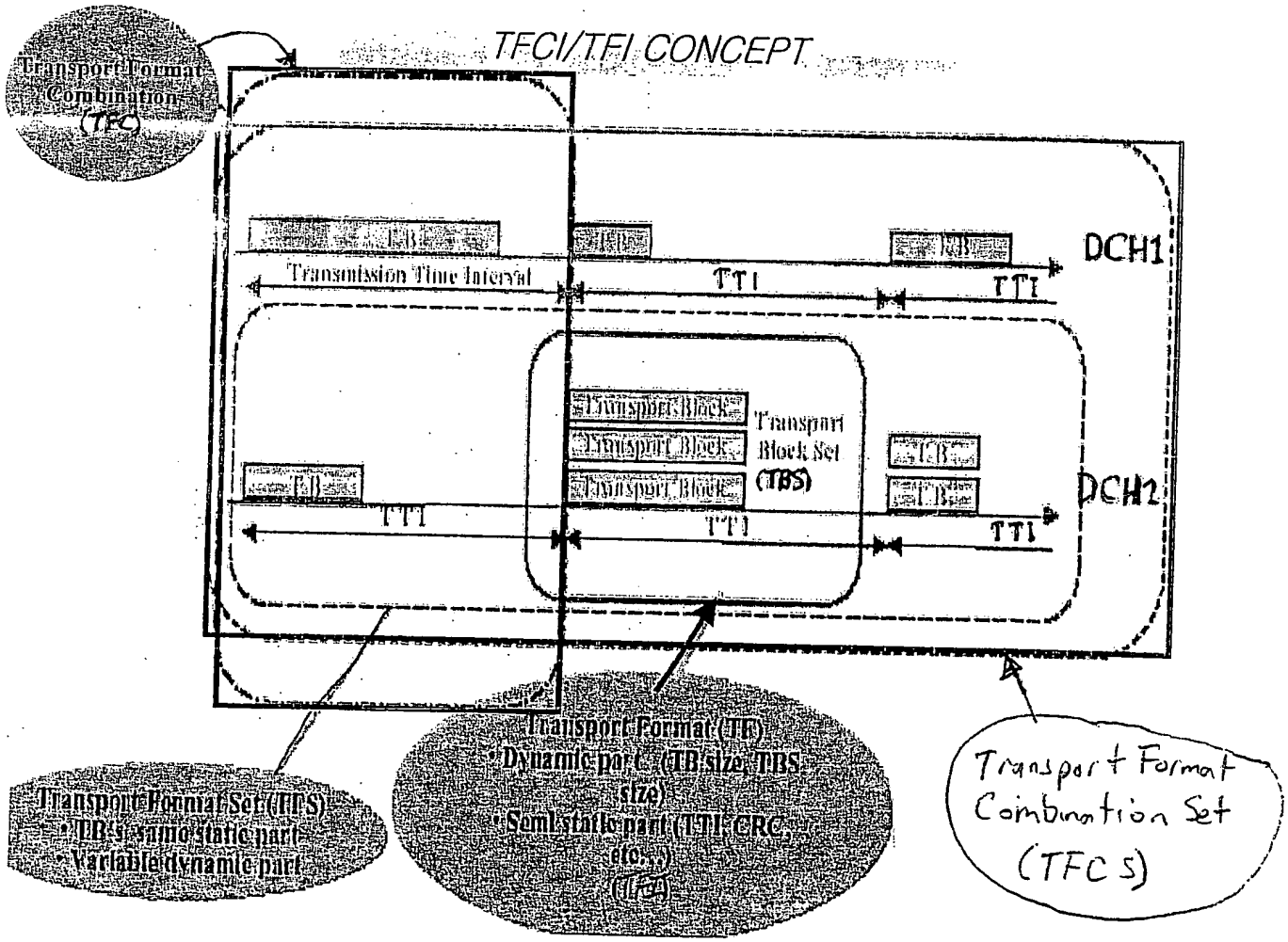

Exhibit B

SN 09/406,729

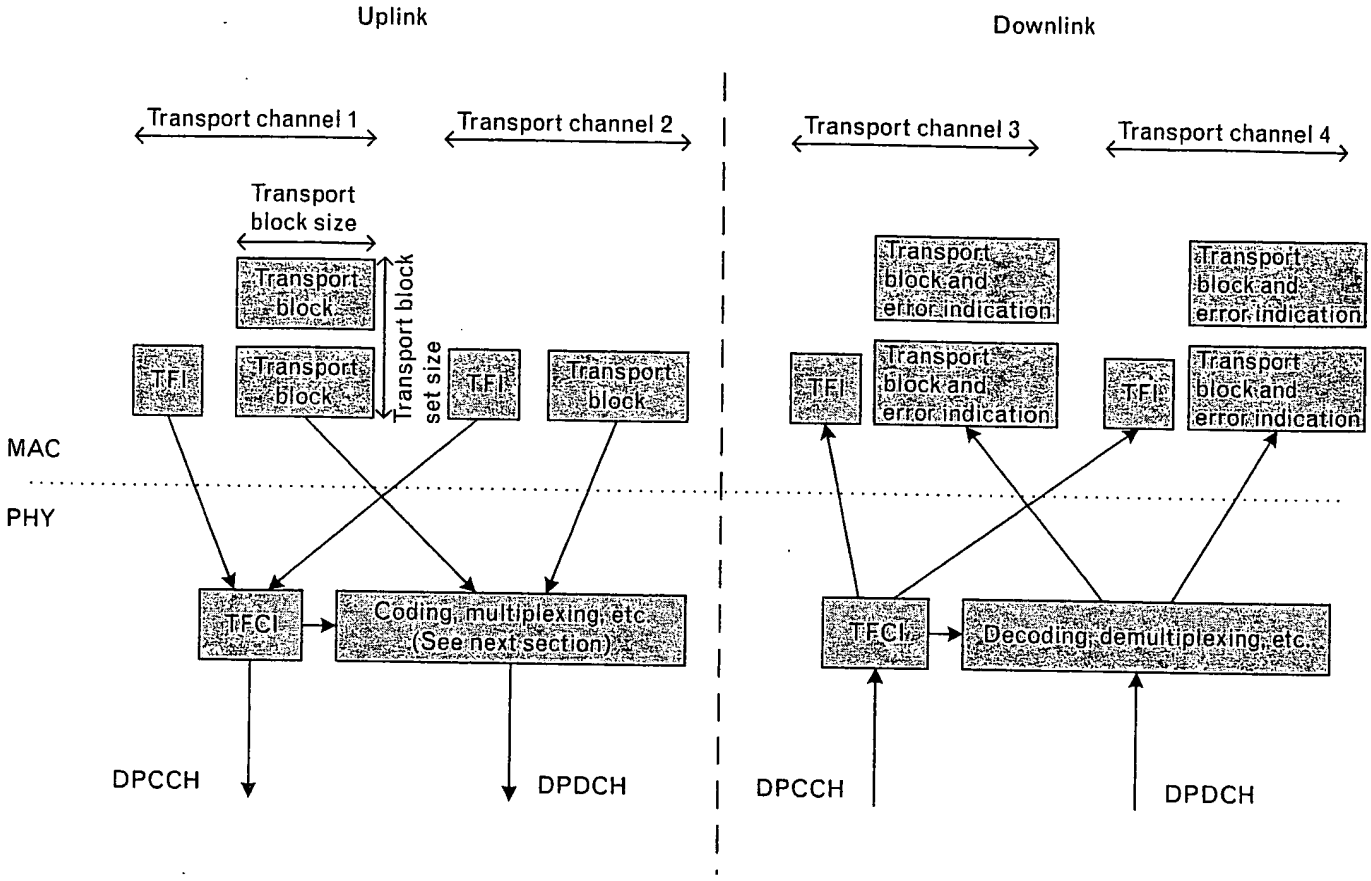

Exhibit C

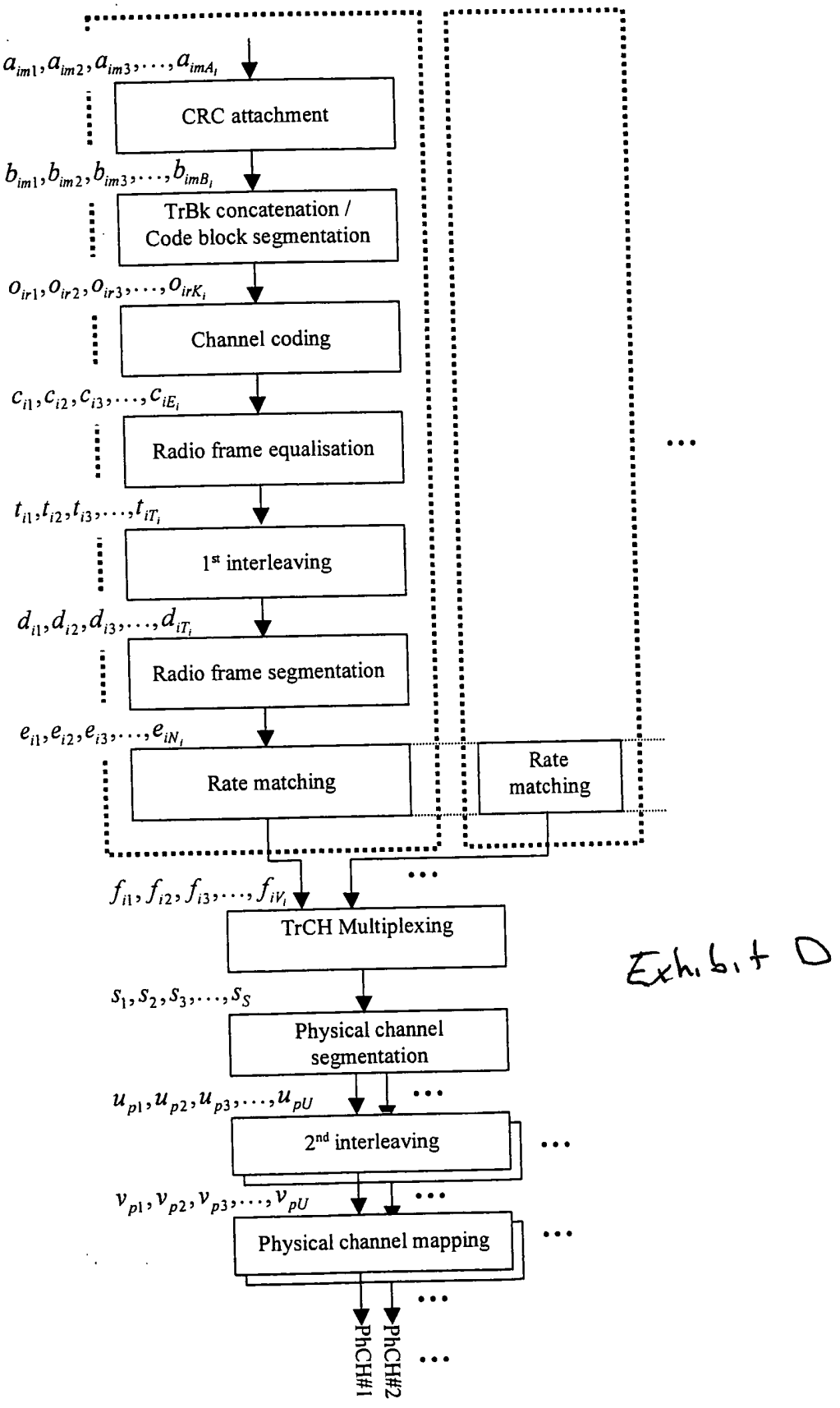

Exhibit D